

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2016/2017

**EBI1016 – ANATOMY & PHYSIOLOGY**  
(BE)

7 OCTOBER 2016  
9.00 am – 11.00 am  
(2 Hours)

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### INSTRUCTIONS TO STUDENT

1. This question paper consists of 3 printed pages including the cover page.
2. Attempt ALL **FOUR** questions.
3. Please write all your answers in the Answer Booklet provided

**Question 1**

- (a) What is meant by homeostasis? Provide an example and explain what will happen if homeostasis fails. [2+2+2 marks]
- (b) (i) Sketch and discuss the structure of the human cell membrane. [4+3 marks]
- (ii) Discuss, with examples, the permeability of the cell membrane to molecules that are water and lipid soluble. [2+2 marks]
- (c) Explain the function of the following organelles found within cells :
- (i) Smooth and rough endoplasmic reticulum, [4 marks]
  - (ii) Mitochondrion and [2 marks]
  - (iii) The Golgi apparatus. [2 marks]

**Question 2**

- (a) Name and explain the three fundamental physiological characteristics of nerve cells. [2 × 3 marks]
- (b) What are proprioceptions? Where are the proprioceptors located? [2+2 marks]
- (c) What are nociceptors? Where are these sensory receptors located? [2+2 marks]
- (d) Sketch and explain the neural pathway involved in the detection of a stimulus and the motor reaction. [5 + 6 marks]

**Continued...**

**Question 3**

(a) What is blood plasma and blood serum? [2+2 marks]

(b) Discuss the types and function of the following blood components: Erythrocytes, Leucocytes and blood platelets.

[3+9+3 marks]

(c) Sketch a diagram to show the flow of blood from the heart, lungs and the body. In another diagram, indicate and explain the flow, chambers and valves within the heart.

[2+4 marks]

**Question 4**

(a) List five functions of the kidney in humans. [ 10 marks]

(b) Sketch and label five important structures of a nephron located in the kidney.

[10 marks]

(c) What is glomerular filtration? What physiological process including transport mechanisms takes place in the tubules of the nephron?

[2+3 marks]

**End of Page.**